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Information Attitude: the Key to Real Productivity

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ABSTRACT

In information and data quality management, we need good tools and architectures. But, in order to achieve real productivity and quality improvements, the technology is not enough. Most of all we need the good attitude to deal with information. This paper introduces the concept of 'information attitude', describes major information attitude problems and symptoms (personal/departmental/enterprise-wide) and presents a set of basic guidelines to obtain real quality and productivity improvements.

I. INTRODUCTION: THE EFFECTIVENESS OF INFORMATION AND IT USAGE

The quality and effectiveness of information and information technology is not just a matter of tools, products, methods and techniques. Organizational and individual practices and culture are equally important.

This article proposes the concept of 'information attitude' and identifies a number of specific (both company and individual) guidelines that enable to obtain this organizational and individual culture. All guidelines are based on typical attitude problems and symptoms, encountered in the daily life of managers, employees, individuals and citizens, wrestling with information overload, improper use of information technology, lack of quality and productivity, overflowing email inboxes, and all other blessings of modern life.

II. RELATED RESEARCH

There has been a lot of research on digital organizational culture and digital literacy. In this section we just name a few of the concepts proposed in the literature: information orientation, digital organization, and digital literacy. Each of the concepts emphasizes the importance of good organizational and individual practices in order to ensure the productive usage of information technology. None of them, however, offers specific guidelines on how to obtain the desired organizational and personal behaviour. In the remainder of the article, we introduce the concept of information attitude and a set of attitude guidelines that will serve as the basis for a more productive information culture.

A. *Information Orientation*

According to Marchand (2001), many organizations have developed performance scorecards (measuring financial, client and internal performance), but they have no effective way of seeing, measuring and managing their information capabilities. He proposes 'information orientation' as a missing performance measure, a means to ensure the effective usage of information within and across functions in an organization. The information orientation of an organization is about information management, information technology and information behaviours and values. Information behaviours and values are the capability of a company to instil and promote behaviours and values in its people for the effective use of information. Managers need to emulate and promote integrity, formality, control, transparency, and sharing, remove barriers for information flow and promote proactive information use in their companies.

B; *Digital Organization*

Brynjolfsson (2003) points out how investment in IT capital alone does not guarantee productivity in an organization. His research instead reveals a distinct set of organizational practices and corporate culture common to the most effective users of IT, defining what he calls the "digital organization". Investment in these organizational practices is necessary: ("*IT creates value only if it lets users work more effectively")*. Brynjolfsson's research reveals that the value of firms which invest heavily in both organizational capital and IT capital is substantially higher than those who invest in one without the other.

C. *Digital Literacy*

Knowing how to find, process, manage and distribute information, using computer tools, is very important. According to Eshet (2004), digital literacy is more than the technical ability to operate digital devices in order to perform effectively with them. Cognitive and computer skills (information seeking, user interfaces, databases, surfing, emailing, office tools) are or should be part of education, and are based on other major thinking skills, e.g.:

- photo-visual skills ("reading" instructions from graphical user interfaces)
- reproduction skills (create new, meaningful materials from existing ones)
- branching skills (constructing knowledge from a nonlinear, hypertextual navigation)
- information skills (evaluating the quality and validity of information)
- socio-emotional skills (understanding of the "rules" in cyberspace).

III. INFORMATION ATTITUDE

A. *An analogy: Safety*

What do we need for a safe working environment or a safe home? We need tools, fire extinguishers, good architecture, escape routes, drills & practice, manuals, emergency teams, hotline support, etc. But this is it not enough! It only works if we have (learned) the *attitude* to avoid, isolate, and react to unsafe situations. This is true, both at the personal level, at the company level and as a society.

B. *Information Attitude*

The same holds for our information environment. We need the tools and the architectures. We need the information orientation, digital organization and computer skills. But, in order to achieve real productivity gains, not just percentages, but orders of magnitude, we also need the good *information attitude* (personal/departmental/enterprise-wide) that enables to obtain this organizational and individual information culture.

Information attitude means understanding the issues of creating, distributing, organizing and maintaining information. It is the attitude to avoid, recognize and respond to unproductive situations.

C. *The 13 Basic Guidelines of Information Attitude*

So, how do we obtain this organizational and individual information culture? Here are the 13 basic

Information Attitude guidelines:

1. Keep a single version of the truth
2. At least, keep multiple versions consistent
3. If you cannot maintain it, don't build/publish it
4. Give users control over their data
5. Think about the receiver
6. Separate the know from the show
7. Separate the know from the flow
8. Capture once and at the source
9. Maintain data quality
10. Integrate
11. Work smarter, not harder
12. Manage documents and data
13. Keep it simple, stupid

IV. TYPICAL SYMPTOMS AND THE 13 ATTITUDE GUIDELINES

A. *Typical symptom : inconsistent versions of the truth*

Texts, policies, regulations, requirements, reports, product descriptions, or whatever important information, are published in various forms: on paper, on websites, in help systems, in brochures. Each of these forms has its audience and periodicity. And each of these forms usually has its responsible editor.

When things change, only one form is updated, e.g. because the responsible paper editor is not able to update the web version, or vice-versa.

The user, who sees different versions, has to guess which is the correct one. Sometimes the website contains the statement: "This is for information purposes only, for the official and latest version, see the paper documents". Clear, but not really user-friendly in the Internet economy.

Of course we can and should use web publishing systems to synchronize versions (e.g. product catalogs). But there is so much other information. For all other information, we should at least apply the following principles:

- Identify the official source;
- Decide about the best official source (preferably electronic, not paper);
- Derive/copy/link automatically from the real source;
- Whenever the source changes, update other versions;
- Do not publish a snapshot unless it is marked as such (and contains an expiry date)

➢ *Attitude 1,2: Keep a single (or at least consistent) version of the truth*

B. *Typical symptom : filenames*

Everyone who has ever run a conference, taught a course, or collected documents about a certain topic X from multiple participants, will recognize this typical symptom:

- when students are asked to submit a report on subject3, the file will be called: subject3.doc (or even worse: paper.doc).
- the receiver receives tens of emails, all with attachment: subject3.doc and has to rename each one of them to student1-subject3.doc, student2-subject3.doc, etc.

This is because the sender only sees his own classification (if any), without considering the purpose of the document.

It is easy to imagine that a conference/course has multiple participants and that a student takes many courses, so why not reflect this MxN relation in the filename, e.g. Submittor-conference-05.doc (actually I prefer to add the year also, as a conference once managed to use my abstract of the year before …).

Of course, there are more sophisticated ways and tools to organize documents, but this is so simple. Why would we still use document1.doc, newpage.htm, presentation.ppt, mycomments.doc, newversion.doc, lastversion.pdf, etc.?

➢ *Attitude 5: Think about the receiver and the purpose*
➢ *Attitude 12: Manage documents*

C. *Typical symptom : updating views*

This is a very common one. Based on some company data, a report is produced. Numbers are easily obtained from the ERP system or manipulated in a spreadsheet and then summarized, and layout is added. When the report reaches completion, some last-minute data and corrections are discovered, and added to the report.

If information changes afterwards, the report is updated, not the source of the data. Who cares about the original data source anyway, it is not my problem. I only deal with my report (or my addresses, my contact information, my list of whatever) and I have a deadline.

After some time, multiple reports, based on the same original data, contain multiple updates, but no update has reached the original source.

Of course we could try to inform all other users of the original data directly in case of any changes (and send update emails), but it is simply not possible, we do not even (want to) know them. What we should do is update the source, the source should notify all subscribers and the reports or views should be able to accommodate the updated data automatically when changes occur. In software design, this is called the Model-View-Controller Architecture. We even have tools to organize this automatic linking, but what is the value of a tool if the attitude is not present.

- *Attitude 6: Separate the know (data, content) from the show (report, presentation)*
- *Attitude 2: Keep multiple versions consistent (update the original, not only the copy)*

D. *Typical symptom : contact information*

With all these new communication media, contact information tends to be locked in each device. A quick count learns that our information about contacts is in 13 places:

1. letters
2. business cards
3. email messages
4. email contacts
5. post-its
6. cellular phone
7. PDA
8. phone book
9. company phone book (paper)
10. company directory (electronic)

11. Google
12. databases
13. LinkedIn, Plaxo, and so on …

Some of the entries are redundant, and in case of differences, it is impossible to tell which is the latest version. Of course, we have to do something about it (and creating a 14th place is probably not a good idea …).

Consistency of course deals with multiple sources. Some contacts are in Outlook, some in Siebel. Integration is a bitch. This used to be on my PDA, but I'm off PDA's now. Stopped cold turkey when I switched to Tablet. Had a lot of stuff on Tablet at one time, but I've really gone back to laptop now. Tablet just didn't do it for me anymore. Unless I put more on my SmartPhone of course. Probably will. Cool stuff that is, my SmartPhone. If you combine the integration blues of tying stuff together, with the very-human-possibility of putting stuff on multiple locations, people become immensely un-productive...

The advice is very simple. Standardize as much as you can. Now I know that won't be easy, because, after all, we're humans. Still. Investing in standardization will really pay off in the end.

- *Attitude 2: Keep it Consistent*
- *Attitude 10: Integrate*

E. *Typical symptom : distributing new versions*

Suppose we have a report, paper, text which sometimes has to be updated with new changes and additions. We want to send the new version to a list of recipients, make it available on a portal, distribute it on paper, or whatever.

What do our recipients need?

- They will need the updates (the stream, the flow), in order to see, analyze and/or approve the changes. We can hardly expect them to read the entire document over and over again.
- They will also need the final result (the stock, the know), for archiving, decision making or other purposes. We can hardly expect our recipients to manually insert all the updates in order to have the latest full version.

So we should give them both (the updates and the final version), but not necessarily in the same form or document. Of course we can use complex revision and versioning tools, but who likes these documents where all revisions are marked, and every single space, dot or paragraph mark is indicated in the margin. Keep it simple, a simple color change is often sufficient.

- *Attitude 7: Separate the know (data, content) from the flow(changes, additions)*

F. *Typical symptom : maintenance*

Buiding a system or site is easy. We have seen so many instances where creative, skilled and intelligent designers built a perfect system/site with up-to-date information. But when asked about maintenance, the typical reaction is: 'When I leave, everyone can update the system. They only have to install my favorite operating system, switch to my super development tool, understand my code, guess my passwords, and find out what is were, … And if they are not able to, they are dummies. So someone else should maintain the content or the system. I even built tools for users to maintain their content in my super system. They only have to read my manuals (which I will write one of these days, but there is no hurry, because nobody reads manuals anyway), use my detailed fill-in-the-blanks web forms, select my undocumented components, and add their content...

So the question is: Will someone maintain the system or update the content? Of course not. Why would they? Will the designer do it? Of course not, because he or she has no interest in the content (unless there is a fee for every change).

- *Attitude 3: If you cannot maintain it, don't build it*

This is becoming very painfully visible in a lot of Intranet sites today. Brilliant ideas, wonderful sites, but maintenance is low on the priority. Every company in the world suffers from this. The result is well known, ruins of information where nobody is quite sure any longer on the accuracy and reliability of information. First you spend an obscene amount of time with a search engine trying to find stuff, and when you do, you smell it and think 'Oh, this one probably isn't very fresh anymore'. Oh well.

Actually, we should start putting less and less stuff online. Only if we really, really are capable of maintaining it. We should probably put that in a policy. An Intranet policy. "A Policy? Are you joking? We hardly have time to go to the bathroom twice a day, what makes you think I would have time to read an Intranet Policy". Point taken. People don't read policies anymore. The central theme should be about 'Information Attitude' A common understanding that everyone in the company feels and lives by. A sort of 'corporate culture' thing, but then related to information: the Corporate Information Attitude. If we could only get that to work.

People immediately lose their perception of trust in a site when they realize it is not properly maintained. Just as they lose their appetite if they see a kitchen that hasn't been cleaned for a while. The message is quite simple:

reduce the information to the essential, but make sure that you can maintain what you publish.

- *Attitude 3: If you cannot maintain it, don't publish it*

G. *Typical symptom : web input black hole*

Every serious application or portal nowadays uses a web interface to collect user data. These fill-in-the-blanks forms seem such a good idea. They are easy to build, easy to learn, easy to validate, so they must be user-friendly.

Actually, these web forms are a nightmare. Basically because they provide one-way traffic only:

- users loose control of their data. Once your data is in and you pressed the 'submit' button, your data is gone. Usually, you don't have a way to add, change or delete any items.
- users can not update previous records or copy entire records. Suppose you want to add some information to an earlier expense note, or want to input the same item as last month? Play it again Sam.
- users have to fill one field at the time. We all know spreadsheets and databases, we all know how to copy entire rows or records, but when filling in web forms, we have to copy field by field and go through the copy-paste routine again. I thought one of the main advantages of computers was to do away with routine tasks. Is this the reason why we need big screens, to put two forms side by side and then copy-paste the fields?
- users have to print screens on paper for their own records. We want to manage the information electronically, right?. We want to do away with the paper. So why is there a 'print' button at the end of every transaction? Is it because users want it, or because we want users to keep a paper administration. They don't need the electronic advantages anyway and it is a nice backup for our trustworthy system.

Users do not only want to manage their own information they provided on the website, they also have additional information which does not fit into the input forms. So what will they do? Yes, they will build their own shadow system (usually in Excel) with the additional info. Is it because they are not willing to adapt to our system? Maybe, but it probably means that our super system is not flexible enough for their legitimate needs.

- *Attitude 4: Give the users control over their own data*

H. *Typical symptom : bad file management*

We use so many computers, memory sticks, email attachments, that one of the fundamental questions in life has become: Where is this file?, on which drive?, on which computer?, on which shared messy disk?, is it the latest version? I once had a report about this item, but where?

The problem of finding files and versions is basically a matter of good organization. Of course we can use sophisticated search tools, text mining, document databases or whatever tool to hide our problem, but the basic issue is about sound classification, simple structures and a little discipline.

- *Attitude 12: Manage documents*
- *Attitude 13: Keep it simple: A fool with a tool is still a fool*

I. *Typical symptom : typing*

Despite all integration efforts, typing and retyping still seems to be an important activity. Typing fast once used to be an asset. Nowadays, in the copy/paste/link era, typing (and certainly retyping) should be considered an inefficiency. The time has come to 'think twice before you type'. Once the information is in electronic form, there is no need to type it again if we need it in another format. Of course it may seem efficient to type it again fast, without bothering about conversions, reformatting, redundant information, but the hidden cost is high. Retyping, no matter how fast, means that we have to validate the input again, and that is more expensive than typing.

Therefore, the message is:

- Never type the same information twice
- It might take a little longer, but if you have the information somewhere, look for it and copy, it will save you the time to proofread and correct
- If the information is correct, the quality will remain

One immediate consequence is that you should never again type your name, address, phone number or email address, with the risk of introducing errors. Have it available somewhere and copy, this will save you from stupid mistakes.

We should use all means to type more efficiently, because we are using computers, not typewriters. There are numerous ways in current tools to do away with naive typing. Use shortcuts, 'replace as you type', keyboard macros, autocorrect, autoformat or whatever way to avoid typing single letters. Typing fast is not an issue anymore, type smarter. Automate routine tasks and texts. Work smarter.

- *Attitude 8: Capture once and at the source*
- *Attitude 9: Maintain data quality*
- *Attitude 11: Work smarter, not harder*

J. *Typical symptom : ignoring the consequences*

Everyone nowadays seems to have invented the need for an integrated database, website, content management system, integrated collection of whatever, e.g. in government applications (violations, crimes, incidents, security, …) or in companies (best practices, skills, expenses, …). But the focus is so much on the development technology and building cost, not on the total cost.

Building the thing is easy, you can use whatever fancy technology. Of course we have to choose the right product, method and technology, but we should certainly think about the *more important* issues:

- where does the input come from? what is the cost of organizing the input?
- why would someone provide this input?
- why would someone want to keep the information up-to-date?
- are users willing to share this information?
- what is the target audience?
- why would someone use the system?

➢ *Attitude 13: Think about the consequences, keep it simple*

V. EMAIL

Email is a story on its own, but a good example of how productivity is compromised by a lack of attitude. We all suffer from the typical symptoms: volume of mails, time spent, broadcasts, lost knowledge, folders filled with documents, spam, large attachments, viruses, security, … Spam is a problem, a big problem, but the solution is easy: delete. The real problem is the rest of the emails.

A. *The problem with email*

The real problem is indeed that the volume of emails shows our lack of content management, document management, routing and workflow, knowledge management, scheduling and task management, or briefly: attitude.

Why is email a problem? It was designed for asynchronous communication, but as indicated in Whittaker ( ), we also use it for:

- Storage

    - document delivery and archiving
    - storing personal names and addresses
- Task management
    - work task delegation
    - task tracking
    - things to do, things to read, things to file.
    - sending reminders
- Scheduling appointments
- Support
    - asking for assistance
    - handling technical support queries

B. *Typical email symptoms and the information attitude*

As an illustration of the wrong information attitude and its implications for productivity, here are some typical symptoms of email misuse.

The 10 super email tips of modern electronic productivity:

1. *Include your boss*
   Put your boss in Cc: (and his/her boss). Include as many people as possible. Show your partners that you are doing important work and that you have good contacts with the top. Don't bother about information overload.

2. *Send your troubles to everyone*
   Broadcast your message to everyone, they have nothing else to do anyway. Sending your problem around will get you off the hook, because now everyone else is responsible.

3. *Forward personal mails using Cc:*
   If you receive a personal mail with some compromising statements or complaints, make sure to react in a neutral way, with the original message attached, but put the person concerned in Cc:. Nothing as rewarding as a good Cc: fight between them.

4. *Send long emails*
   It is free and they print it anyway. Short emails are for sissies. Show that you are dealing with complicated issues.

5. *Keep everyone informed*
   Make sure everyone is informed about all intermediate arrangements, even if they are only interested in the final result. Send all changes to everyone and expect them to keep track of all the updates. Send the date, the room, the agenda and the last minute changes of a meeting in different emails. If something goes wrong, you can always reply: 'It was in one of the mails'.

6.Keep everyone busy

Use email when there are other alternatives (calendars, scheduling systems, …). Ask for long lists of free dates to set up a meeting.

7.Add pictures and large attachments

Don't bother to put pictures, posters, documents and brochures on a site. Send them around by mail. Storage is free anyway. Leave it to the receiver to manage, delete or organize the documents.

8.Include as many documents as possible

Use as many attachments as possible. It will keep them busy printing, collecting and archiving. A real example to illustrate this. But so common in everyday company life. I recently received an invitation for an important committee meeting. The email contained 12 attachments, including the agenda, minutes of last meeting, a strategy document, some comment letters, proposals and a few spreadsheets with numerous data. The mail was sent to all 15 committee members. The secretary who sent the mail, being a computer literate person, believed in the advantages of digital and fast electronic communication, and did not want to waste valuable company time and money by spending so much time at the copy machine, paying for paper, enveloppes and stamps, printing the addresses for sending the paper documents around, and loose an extra day in the mail. Sending this by email instead of paper saved her at least 1 hour of expensive time. A wise decision in this era of fast electronic communications. What did I do? Of course I wanted to print the documents and prepare for the meeting. It took me 1 hour to open, print, identify, run to the printer, retrieve and collect all 12 documents. Actually it took me a little longer, because the printer is a workgroup printer and some documents mysteriously disappeared. So I needed another hour to find out what was missing (remember that most documents have no titles or page numbers) and print it again. But OK, one hour. I know all 15 members did this, or at least they should have. So, in total, we spent 15 hours of so-called highly paid professional time to make sure we had the documents. Some of us are lucky enough to have secretaries to do this job, but the amount of time is the same. What is the result of this misunderstanding of information attitude? 15x1 hour or 2 days of expensive company time lost to save one hour of secretary time, or a total productivity loss of 2 days, just for one meeting (not even counting the meeting itself…). Talking about productivity gains of modern information technology without the right attitude…

9.Publish names and email addresses

Never use Bcc: to ensure privacy. Let everyone know who your target audience is. Show all your friends, they will be happy to be associated with you

10. *Always trust your email*
    Always trust the sender, the date and the content of an email.

VI. CONCLUSION

The key message is: we need good tools, techniques, architectures, …. We need digital literacy and computer skills, but this will not solve the information quality and productivity issue if there is no sound *information attitude* (personal/departmental/enterprise-wide).

Information attitude means:

- understanding the symptoms
- understanding the issues of distributing and maintaining information
- know what can go wrong
- avoid, recognize and respond to unproductive situations
- follow the attitude guidelines
- manage information
- work smarter

May the attitude be with you …

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